

**Division of Geological & Geophysical Surveys**

**PRELIMINARY INTERPRETIVE REPORT 2004-2**

**2003 MEGAFOSSIL REPORT FROM THE CHANDLER LAKE QUADRANGLE, NORTH  
SLOPE, ALASKA**

by  
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(Submitted February 7, 2003)

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# 2003 Megafossil report from the Chandler Lake quadrangle, North Slope, Alaska

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## Introduction

In the summer of 2003, the Alaska Division of Geological and Geophysical Surveys (DGGS) conducted field studies in the central North Slope region as part of an ongoing effort in the National Petroleum Reserve in Alaska (NPRA) and Statemap projects. This report discloses the results of paleontological analyses performed on five megafossil samples that were collected during the field season. These fossils are of particular interest because they will help constrain the ages of the formations from which they were collected. The megafossils will also provide insight into the depositional environment of the deposits. The samples included in the analyses were collected from the Tuluvak and Okpikruak Formations within the Chandler Lake quadrangle (fig. 1). The data in this report are also available on the DGGS website at [www.dggs.dnr.state.ak.us](http://www.dggs.dnr.state.ak.us).

**Sample**        03 RR 52D

Bivalve

*Mytiloides mytiloides* (Mantell)

Remarks: This species indicates an early Turonian age and normal marine salinity. These specimens (nice material) look to be a late form of the species, suggesting a late early Turonian age.

Location: 68.85773 N 152.59596 W

Formation: Tuluvak

Lithologic Details: Very fine-grained, dark gray sandstone, parallel bedded, non-graded, laterally continuous



*Mytiloides mytiloides* (Mantell)

**Sample** 03 RR 53A

Bivalve

*Pholadomya* aff. *P. subelongata* Meek

Remarks: Indicates a relatively nearshore marine environment. Not age-specific. *Pholadomya subelongata* is found in the Upper Cretaceous of the Nanaimo Group in British Columbia, but similar forms are also found in Lower Cretaceous Rock of western North America. This form has not been previously documented in northern Alaska.

Location: 68.88625 N 152.50837 W

Formation: Tuluvak

Lithologic Details: Very fine-grained, medium to dark gray sandstone to silty shale, horizontally bedded with minor cross-beds



*Pholadomya* aff. *P. subelongata* Meek

**Samples** 03 DL 34-2, 03 DL 38-1, 03 DL 38-2

Bivalve

*Buchia sublaevis* (Keyserling) ?

Remarks: This species indicates an early Valanginian Age in a normal marine environment. I don't know if these samples are approximately at the same level as those below, in which Berriasian *Buchia okensis* (Paylow) are present, the sample numbers suggest this may be the case. If this is so, then the

identification of *B. sublaevis* is problematic, because I am firmly convinced that the identification of *B. okensis* is correct. The specimens in these samples certainly look like *B. sublaevis*, and I would not question their identity otherwise. However these *Buchia* are all juveniles, which can be difficult to work with. So I have questioned their identity above. If they are not *B. sublaevis*, they do not appear to be juvenile *B. okensis*, but there is a possibility that they are juvenile *B. volgensis* (Lahusen), which co-occurs with *B. okensis*.



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*Buchia sublaevis* (Keyserling) ? 03 DL 38-2

03 DL 34

Location: 68.4112 N 150.9054 W

Formation: Okpikruak

Lithologic Details: Siltstone with thin-bedded sandstone. Weathers dark grey-black and brown-red respectively. Contains abundant flute casts and crawling traces.

03 DL 38

Location: 68.4108 N                    150.9044 W

Formation: Okpikruak

Lithologic Details: From the same exposure as 03 DL 34.

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**Sample**            03 DL 34-3A, 03 DL 34-3B, 03 DL 37-1

Bivalve

*Buchia okensis* (Pavlow)

Remarks: The species is indicative of the Berriasian Age and a normal marine environment.

03 DL 34

Location: 68.4112 N                    150.9054 W

Formation: Okpikruak

Lithologic Details: See above.

03 DL 37

Location: 68.4104 N                    150.9032 W

Formation: Okpikruak

Lithologic Details: From the same exposure as 03 DL 34.

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**Sample**            03 DL 37-2

Bivalve

*Buchia* cf. *B. uncitoides* (Pavlow)

Remarks: The species is indicative of the Berriasian Age and a normal marine environment. This species has been identified in the arctic region of Canada and on the Pacific Coast, but to my knowledge has not been previously identified on the North Slope of Alaska. Jeletsky indicates that this



*Buchia okensis* (Pavlow)  
03 DL 34-3A



*Buchia* cf. *B. uncitoides* (Pavlow)

species may first occur at a slightly higher level in the Berriasian than the first occurrence of *Buchia okensis* in the Canadian arctic.

03 DL 37

Location: 68.4104 N                      150.0392 W

Formation: Okpikruak

Lithologic Details: From the same exposure as 03 DL 34.

#### Sample Locations

<b>Sample ID</b>	<b>Latitude</b>	<b>Longitude</b>	<b>Formation</b>	<b>Age</b>
03 RR 52D	68.85773	-152.59596	Tuluvaq	Turonian
03 RR 53A	68.88625	-152.50837	Tuluvaq	Indeterminate
03 DL 34-2	68.41120	-150.90540	Okpikruak	early Valanginian
03 DL 34-3A	68.41120	-150.90540	Okpikruak	Berriasian
03 DL 34-3B	68.41120	-150.90540	Okpikruak	Berriasian
03 DL 38-1	68.41080	-150.90440	Okpikruak	early Valanginian
03 DL 38-2	68.41080	-150.90440	Okpikruak	early Valanginian
03 DL 37-1	68.41010	-150.90320	Okpikruak	Berriasian
03 DL 37-2	68.41010	-150.90320	Okpikruak	Berriasian

## 2003 North Slope Megafossil Sample Locations

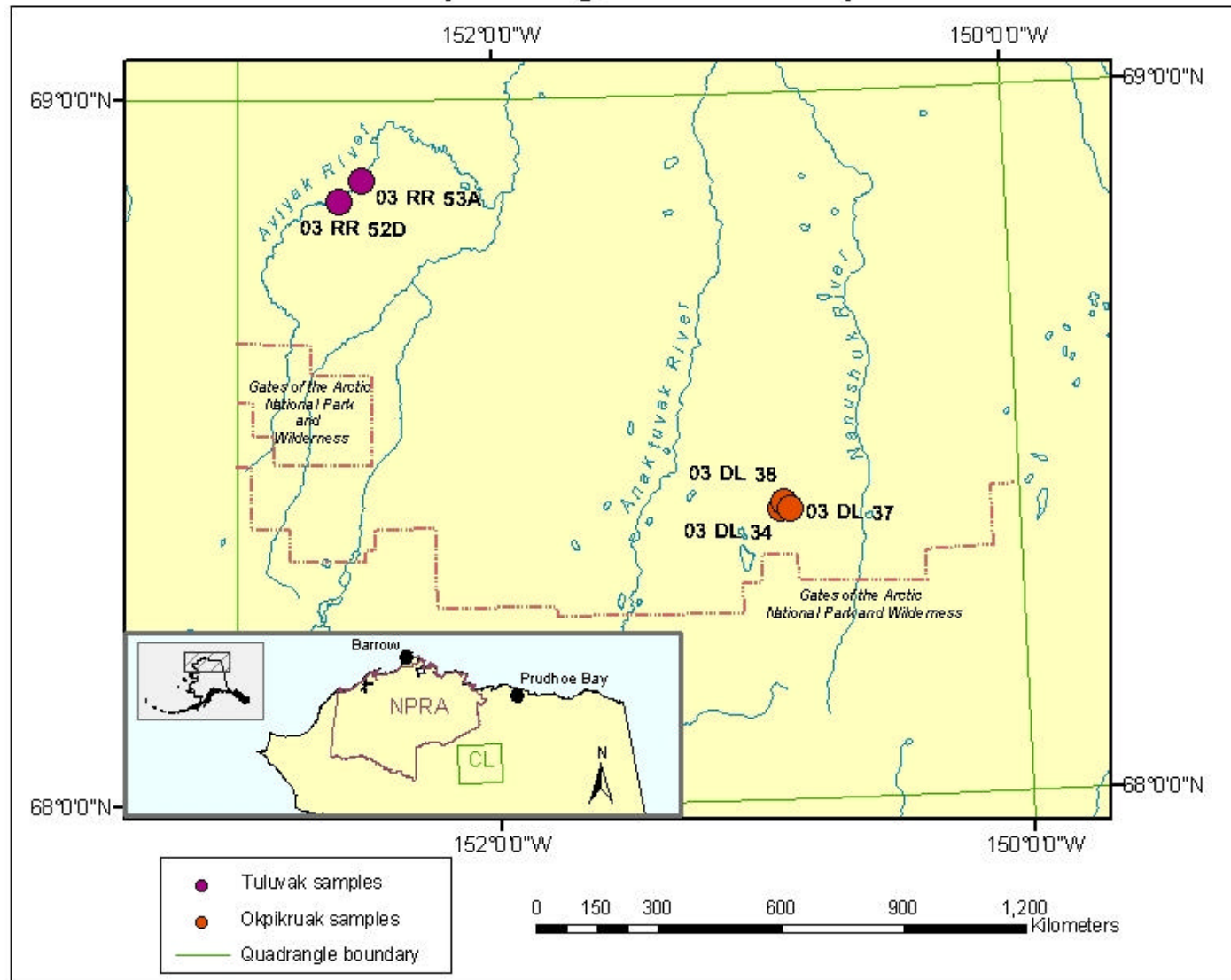


Figure 1. Map showing the locations of analyzed megafossil samples. The samples are from the Chandler Lake (CL) quadrangle, North Slope, Alaska, southeast of the National Petroleum Reserve in Alaska (NPRA) boundary.